PATENT ABSTRACTS OF JAPAN

(54) MULTI-FUNCTION TELEVISION RECEIVER

(57)Abstract:
PROBLEM TO BE SOLVED: To improve the utility value and the convenience for the user and a provider (broadcast station) through the relating processing between an object sent from a broadcast program and an object obtained by an accessible means that the broadcast program.
SOLUTION: A communication means consisting of a turner 112 and a VBI decoder 12 receiving 1st object data multiplexed on a television signal for its vertical blanking period. A communication means consisting of a CPU 133 and a MODEM 131 receives 2nd object data used for a network including a server. An interlocking means using an I/O section 137a graphic controller 135memories 134136a light receiving data processing section 138and a specification table or the like is used to execute an interlocking operation associating the 1st and 2nd object data to each other.

CLAIMS

[Claim(s)]
[Claim 1]A means of communication which incorporates the 1st object data sent

with a television signaland said 1st means of communication are separate systemsA multi-functional TV apparatus having an interlocking means which performs ganged operation which associated an object incorporation means which can acquire the 2nd object dataand the 1st object data of said 1st means of communication and said 2nd object data.

[Claim 2]The 1st means of communication that incorporates the 1st object data sent with a television signaland said 1st means of communication are separate systemsThe 2nd means of communication in which access to incorporating the 2nd object data used in a network including a server and this network is possibleA multi-functional TV apparatus having an interlocking means which performs ganged operation which associated the 1st object data of said 1st means of communicationand the 2nd object data of said 2nd means of communication.

[Claim 3]The multi-functional TV apparatus according to claim 1 or 2wherein said interlocking means generates a signal compounded to a video signal transmitted as a TV program by said television signal based on said 2nd object data.

[Claim 4]The multi-functional TV apparatus according to claim 1 or 2wherein the said 1st and 2nd object data is specified in the same format so that analysis processing can be carried out in the same processing circuit.

[Claim 5]Control data contained in said 1st object data or said 2nd object data is used for said interlocking meansThe multi-functional TV apparatus according to claim 1 or 2 including functions also including a picture of a TV program by said television signal which control size and a display position of a picture which are displayed on a display.

[Claim 6]Control data contained in said 1st object data or said 2nd object data is used for said interlocking meansA text contained in object data of at least one side or boththe multi-functional TV apparatus according to claim 1 or 2 including a function which arranges still picture information.

[Claim 7]Said interlocking means is included in said 1st object data or the 2nd object dataand picture layout information over a displayWhen the number of pictures (N) is showncompare this number of pictures (N) with the number of pictures (M) which is stored in a specification table which it is peculiar and is owned and which can be displayedand in N>MThe multi-functional TV apparatus according to claim 1 or 2 including a control facility which displays a picture of a priority set up beforehand.

[Claim 8]The multi-functional TV apparatus according to claim 2wherein said 2nd means of communication has an interface for public lines for performing communication with a server via a public line and said interlocking means has an interface for remote controls for performing communication with a remote control.

[Claim 9]The multi-functional TV apparatus according to claim 1 or 2 having a means which displays based on said data which saved data beforehand at data storage equipment of a receiverand was saved with object data received simultaneously with a program in advance of reception of a program.

[Claim 10]So that the 1st object data (or 2nd object data) supplied by a storage and the 2nd object data (or 1st object data) that received may be related and it

may operate. The multi-functional TV apparatus according to claim 1 or 2 having the means carried out.

[Claim 11]The multi-functional TV apparatus according to claim 8 having a telephone means which dial information is inputted by operation key used also [operation / said remote control / television]and carries out telephone dispatch by this dial informationand whose telephone call is enabled.

[Claim 12]The multi-functional TV apparatus according to claim 11 when said interlocking means is obtained [arrival of a line connection request] via said 2nd means of communicationwherein it contains a means to control the Television Sub-Division voice response in the attenuation direction.

[Claim 13]The multi-functional TV apparatus according to claim 2wherein said interlocking means has a memory measure which memorizes access information for accessing the partner points transmitted via said 1st or 2nd means of communicationsuch as a server address or a number to be dialed.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the multi-functional TV apparatus which has the function to process by analyzing the received script.

[0002]

[Description of the Prior Art]In recent yearsthe product which has an accessing function over the Internet which is an external network as a domestic electric product by progress of semiconductor technology is developed. There is a television set which contained the highly efficient central processing unit (CPU) as a representative of such a product. Hereafterthis kind of television set will be called TV with Internet functions. The TV with Internet functions builds CPUabnormal conditionsand a demodulator (a modem is called below) in the inside. It is possible for viewing and listening of a TV program to be possible as usualand also to access the server of the Internet.

. And were placed on the server of WWW (World Wide Web). The E-mail using the information service and the Internet which carry out browsing of the package which comprises one or more files etc. which summarized downloadable software programsother documentssoundpictureetc. can be used. In this Descriptionthe above-mentioned package and the data of an E-mail are only described as Internet informationand are explained.

[0003]The composition of the TV with Internet functions considered conventionally is shown in drawing 14. In drawing 14the television signal transmitted by the broadcast wave is inputted from the receiving antenna 10. Channel selection is performed by the tuner 12 and the signal of the selected channel restores to the inputted signal. The baseband signal acquired by the recovery is based on NTSC systemfor example in Japan. A baseband signal is

inputted into NTSC decoder 13is decodedand is changed into a luminance signal and a chrominance signal.

[0004]The above is the composition of the usual TV receiver. In the case of a TV with Internet functionsthere is the screen switch portion 14 for displaying the picture according to Internet information as viewing and listening of the usual TV program selectively. When setting out of a TV receiver is the mode which displays the usual TV programthe screen switch portion 14 chooses the luminance signal and chrominance signal from NTSC decoder 13draws them to the output terminal 15and is displayed on the display which was connected to the point of this output terminal 15 and which is not illustrated.

[0005]On the other handInternet information is inputted via public linessuch as a telephone lineISDN (Integrated ServicesDigital Network)and CATV cables. The Internet information inputted from the input terminal 21 is inputted into the modem 22. The modem 22 can perform reception of dataor transmission of data. It is connected to the system bath 23 and the modem 22 performs incorporation and transmission of data under control of CPU24. CPU24 performs data processing and control of each block based on the program (software) beforehand stored in the memory 25. CPU24 will supply this data to the graphic controller 26if the decoded data is an object for display control. The graphic controller 26 outputs a video signal via the video memory 27and supplies it to the screen switch portion 14. When it is the mode in which setting out of a TV receiver displays Internet informationthe screen switch portion 14 is derived to the display which chooses the video signal from the video memory 27and is not illustrated via the output terminal 15. TherebyInternet information is displayed on a display.

[0006]The input output interface (I/O part) 28 is connected to the above-mentioned system bath 23. Channel selectionpicture quality adjustmenta display-mode changeetc. can be performed via the I/O part 28.

[0007]The light-receiving data processing part 29 is connected to the system bath 23. The light-receiving data processing part 29 can receive and process the signal transmitted from the remote control 30and can switch the moving function of the system according to a user's operation by the result. The control signal according to operation is supplied to the control end of the tuner 12NTSC decoder 13and screen switch portion 14 grade through the previous I/O part 28.

[0008]There is also a TV with Internet functions which carries out 2 screen display of television broadcasting and the Internet information simultaneously by replacing with the screen switch portion 14 and providing a screen synchronizer in others.

[0009]Nextthe software operation about processing of the Internet information of CPU is explained using drawing 15. Drawing 15 is a figure with which CPU explains the example of 1 operation of the software operation about processing of Internet information.
The function built by software is blocked and shown.
The example of operation by software is document "interface"for example. The June1996 item It is carried on 135 pages from 131 pages. Drawing 15 is created

according to the contents of this printingand <u>drawing 15</u> is shown according to the flow of processing of the structure of software.

[0010]If the line connection to the Internet is performedcommunications protocol processing of a modem will be performed by the modem control block 41 with which Internet information is equivalent to the modem 22. The output data of this modem control block 41 is sent to the network computation block 42. Usuallysince communication is performed by the protocol by which the information on the Internet is called TCP/IP (Transmission Control Protocol/Internet Protocol)In the network computation block 42processing based on TCP/IP is performed and the Internet information included in a packet is taken out. This taken-out Internet information is inputted into the following HTTP processing block 43.

[0011]The contents (file which exists in the server on WWW) of WWW which there are also hundreds of protocols on the Internet and was described in a language called HTML (Hyper Text Markup Language)An exchange of data is performed by a HyperText Transfer Protocol (HTTP:HyperText Transfer Protocol). This HTTP is the "Sutee Torres" (it does not wait for state) protocol designed for fast transmission of a document.

[0012]Thereforein the HTTP processing block 43HTML obtained from HTTP is taken out and it sends to the following HTML analysis block 44. In the HTML analysis block 44grammar analysis of HTML is conductedpredetermined data is decoded and the developed data is supplied to the browser block 45. The browser block 45 displays by arranging the developed data. A actual layout display is realized by the software processing by CPU24and the graphic controller 26.

[0013]
[Problem(s) to be Solved by the Invention]According to the above-mentioned TV with Internet functionsthe signal-processing system in the mode which displays the usual TV programand the signal-processing system in the mode which displays Internet information are independently thoroughly. When it seems that he would like to know information detailed about the performer of the TV program to which the user is viewing and listeningfor examplea personagainWhen the place where Internet information exists by a TV program is being introduced by the notation of URL (URL:Universal Resource Locater) form ("http://www.toshiba. ..." etc.)Or when it seems that he would like to know information detailed about the area currently photoed in this programthere is a case where a user wants to access the Internet and to acquire Internet information.

[0014]In this caseafter a user cuts down the name of a performer's name and the inclusion place of a programURLetc. by a memo and memory and inputting into a TV with Internet functions with the input interface of a keyboard etc.it is necessary to access the file on the server of the connection destination of the Internet. There is a problem that operation of such access cannot acquire Internet information immediately inconveniently for a user.

[0015]Thenthe object to which this invention is sent by a television signalAs related processing with the object used in a network including a server can be performedit aims at providing the multi-functional TV apparatus which enabled it

to acquire improvement in utility valueand convenience.

[0016]

[Means for Solving the Problem]A means of communication which incorporates the 1st object data in which a multi-functional TV apparatus of this invention is sent with a television signaland said 1st means of communication are separate systemsIt has an interlocking means which performs ganged operation which associated an object incorporation means which can acquire the 2nd object dataand the 1st object data of said 1st means of communication and said 2nd object data.

[0017]Since access to the 2nd object can be interlocked by the above-mentioned means using control information included in the 1st object datathe user can view and listen to information by the 1st objectand information by the 2nd object easily.

[0018]

[Embodiment of the Invention]Hereafterthis embodiment of the invention is described with reference to Drawings. Drawing 1 is the 1 embodiment of this invention. In drawing 1the television signal transmitted by the broadcast wave is inputted from the receiving antenna 111. Channel selection is performed by the tuner 112 and the signal of the selected channel restores to the inputted signal. The baseband signal acquired by the recovery is based on NTSC systemfor example in Japan. A baseband signal is inputted into NTSC decoder 113is decodedand is changed into a luminance signal and a chrominance signal.

[0019]The output of NTSC decoder 113 is inputted into the compression elongation processing part 114. The compression elongation processing part 114 carries out compression extension of the picture to level and/or a perpendicular direction using the memory 115and compression and elongation processing carry out it so that it can display on a desired display position. The control signal for this graphical data compression and extension is given from the graphic controller 135 mentioned later.

[0020]The picture signal outputted from the compression elongation processing part 114 is inputted into the composition processing part 116is compounded with the picture signal from the video memory 136 mentioned laterand is outputted to the output terminal 117. The output image signal of this output terminal 117 is displayed on the display which used CRT or a liquid crystal.

[0021]The output signal of the further above-mentioned tuner 112 is inputted into the VBI data decoder 120. This VBI data decoder 120 decodes the data-broadcasting signal by which multiplex is carried out to the vertical blanking period (VBI). Correction datasuch as being sent in order to complement a character multiple signal and the present programis in a data-broadcasting signal. As this correction datathere is various data by hope by the side of a broadcasting station. For exampleimage data (the static picture and the animation) and voice data of the supplementary explanation sentence of the characters of a dramaor the projected sceneryand a supplementThe ordererssuch as text datasuch as description of itemand goodsthis orderer's telephone number dataIt is a script for processing interactively the layout control data for controlling the image arrangement position

on a screenand the sent data to which it cameetc.and these correction data is the 1st object data.

[0022]In this Descriptionwhat comprises resourcessuch as data required for execution of the script (program) which processing unitssuch as CPUshould performand this scriptis defined as "object data."

[0023]All the object data of the above 1st is stored in RAM at once. Hereafterespecially the data to explain is the 1st object data relevant to the Internet linkage also in it. And this 1st object data can be contributed in order to answer remote control operation and to perform data processingsuch as connection with the Internet Service Provider by public linessuch as a telephonepacket-data creationand transmission.

[0024]The above is the composition of the usual TV receiver. In the case of this multi-functional TV apparatusviewing and listening of the usual TV program and Internet information are associated. That isthe automatic access command for making addressessuch as URL in which the contents of the Internet existaccess automatically is contained in the 1st object data transmitted using VBI.

[0025]The multi-functional TV apparatus of this embodimentIf the 1st object data in which this automatic access command was contained is inputtedAfter dialing of the modem 131 is automatically carried out by the interlocking means by CPU133 to the service provider of the Internet by which registration of the establishment is carried out beforehand and it is connected to the Internet by itthis server of the Internet is accessed and Internet information is incorporated.

[0026]Thusthe user can acquire Internet information automatically. The Internet information inputted via the input terminal 130 is inputted into the modem 131. The modem 131 can perform reception of dataor transmission of data through public linessuch as a telephone lineISDN (Integrated Services Digital Network)and CATV cables. It is connected to the system bath 132 and the modem 131 performs incorporation and transmission of data under control of CPU133. CPU133 performs data processing and control of each block based on the program (software) stored in the memory (ROM and RAM are included) 134. CPU133 will supply this data to the graphic controller 135if the decoded data is an object for display control. The graphic controller 135 outputs the video signal as a picture via the video memory 136and supplies it to the composition processing part 116.

[0027]The input output interface (I/O part) 137 is connected to the above-mentioned system bath 132. Selection of a broadcast channelpicture quality adjustmentetc. can be performed via the I/O part 137.

[0028]The light-receiving data processing part 138 is connected to the system bath 132. The light-receiving data processing part 138 supplies the control signal acquired by receiving and processing the signal transmitted according to operation of the remote control 139 to the control end of the tuner 112 and NTSC decoder 113 grade via the previous I/O part 137. Therebythe moving function of the system according to the user's remote control operation can be switched. The whole system is controllable via the remote control 139CPU133and the graphic controller 135. For exampleit is executionreleaseetc. of graphical-data-

compression elongation processing.

[0029]<u>Drawing 2</u> is the figure shown in order to explain the example of 1 operation of the TV apparatus of the above-mentioned composition. This figure blocks and shows the function built by software.

[0030]The data-broadcasting signal by which multiplex is carried out to the vertical blanking period (VBI) is supplied to the VBI-data processing block 211 from the VBI data decoder 120. In the VBI-data processing block 211the 1st object (the error correction code is added so that an error may not be generatedwhen distortion arises in a transmission system) is taken outand error correction processing etc. are performed. It can realize by using the protocol of teletext and this is also making the program of an error correction serve a double purpose. The 1st object to which the error correction was performed is supplied to the object processing block 212.

[0031]In the object processing block 212the protocol of an object is processed and an object is outputted to the object interpretation block 213. The still picture information contained in the object in the object interpretation block 213The script for processing interactively the Internet information of the layout control data for controlling the image arrangement position on text datavoice dataand a screenetc. and the sent dataetc. are developedand the browser block 214 is supplied.

[0032]On the other handif the line connection to the Internet is performed by the automatic access command contained in the 1st objectcommunications protocol processing of a modem will be performed by the modem control block 221 with which Internet information is equivalent to the modem 131. The output data of this modem control block 221 is sent to the network computation block 222.

[0033]Since communication is performed by the protocol by which Internet information is called TCP/IP (Transmission Control Protocol/Internet Protocol)In the network computation block 222processing based on TCP/IP is performed and the Internet information included in a packet is taken out. This taken-out Internet information is supplied to the following HTTP processing block 223.

[0034]The contents of WWW are described in a language called HTML (Hyper Text Markup Language)and the protocol for transmitting and receiving these contents is HTTP (Hyper Text Transfer Protocol). Thereforein the HTTP processing block 223by performing processing based on HTTPHTML form Internet information is taken out and the following HTML analysis block 224 is supplied.

[0035]The HTML analysis block 224 conducts grammar analysis of HTML about the Internet information described in the language of HTML of the supplied original Internetdecodes predetermined data and supplies the developed data to the browser block 214. In the HTTP processing block 223the 2nd object later mentioned from the packet which communicates by HTTP is separated and taken outand the object processing block 212 is supplied.

[0036]The Internet information to which grammar analysis of the HTML from the HTML analysis block 224 was conducted as for the browser block 214The data from the object interpretation block 213 is generated as a video signal with layout informationand this video signal with a layout is supplied to the video-signal

processing block 225.

[0037]The video-signal processing block 225 compounds the broadcast video signal and the video signal with layout information from the browser block 214 which have been sent as a usual broadcasting signal according to layout informationand outputs them as a synthesis video signal. This video-signal processing block 225 is equivalent to the compression elongation processing part 114the memory 115and the composition processing part 116 in drawing 1.

[0038]Drawing 3 is a figure showing the contents 301 of the Internet described in the language of the usual HTMLand a part of 2nd object with the object name of "Team" by which the link is stretched in these contents. If the 2nd object shown in this drawing 3 describes the contents of data as it is and a data structure describes thisit will become a thing except the server address (1) of drawing 7 (A)and (2)for example. Howeverthe server address may be contained in the 2nd object.

[0039]As shown in drawing 3the contents 301 sent by the server of the Internet are described in the language of HTMLand the information which quotes the 2nd object used for this part especially with this multi-functional TV apparatus is newly embedded. The portion which shows the information which quotes the 2nd object by drawing 3 by <cap"[OBJECT data= --(omitted)--]>+ line feed mark +</OBJECT > corresponds. The information which quotes this 2nd objectand <OBJECT data=Team type="application/icap">Object data (OBJECT data) is an object name of "Team"and the form (type) shows that it is "application/icap"for example.

[0040]Analysis of the Internet information described in the language of HTML is conducted detecting the tags (<HTML><BODY>etc. which were surrounded with the sign "<>" of the sign of inequality of a figure) on which it decides beforehand. Thusthough the object using the tag used for the contents of the Internet especially by this invention is embedded freelyIn the browser sidesuch as the usual general purpose computer which cannot recognize this tagsince it is to ignoredisturbance is not generated at all on a screen and compatibility is maintained.

[0041]A concrete script (program) and data are described by the 2nd object "Team" quoted in these contents 301for exampleit may be saved on the same directory of the same server of WWW as file with the another contents 301. About the descriptive content of this 2nd objectit is <OBJECT data= of the contents 301... It may be described between > and </OBJECT>. As this embodimentexplanation is continued about the descriptive content of this 2nd object as what is saved on the same directory of the same server of WWW as file with the another contents 301.

[0042]Nextoperation of a multi-functional TV apparatus when the object "Team" quoted by the contents 301 and these contents 301 of this Internet is incorporated with the automatic access command contained in the 1st object data is explained.

[0043]If the object "Team" quoted from the contents 301 and these contents 301

of the Internet is incorporatedthe HTTP processing block 223 will separate and take out the 2nd objectand will supply it to the object processing block 212. The object "Team" which is the 2nd object shown in this drawing 3 is processed by the object processing block 212 and the object interpretation block 213.

[0044]Although this embodiment explained the object "Team" which is the 2nd object data as what is supplied from the Internet via public linessuch as a telephoneIt may be transmitted by broadcast using VBI and may prepare for ROM of the memory 25 in a multi-functional TV apparatus beforehand. When preparing for this ROM beforehandthe object name memorized by ROM of the multi-functional TV apparatus should just be quoted by the contents 301 of the Internet. For exampleit can use general-purpose and the receiving time needed for receiving the 2nd object can be shortened by having as a ROM beforehand about the 2nd frequently-used general-purpose object.

[0045]Drawing 4 and drawing 5 are the figures for explaining operation in case the contents which are in the Internet in order to tell a user about other game progress are displayed simultaneously with a program by the intention by the side of a broadcasting station.

[0046]Drawing 4 (A) is a screen (animation) when having received the sports programfor examplethe program of a soccer gameIf the 1st object that has an automatic access command for accessing the server of the Internet at VBI is broadcastthere isand the situation where relation with the Internet is canceled is shown. [no] In this casecompression elongation processing of a picture is not performed but is similarly displayed as the receive state of the usual television broadcasting.

[0047]If the signal with which it is superimposed on the 1st object that has an automatic access command for accessing the server of the Internet at VBI is received while displaying this drawing 4 (A)The display which asks a user whether the multi-functional TV apparatus of an application concerned accesses the Internet as the 1st object shows to drawing 4 (B) is performed first. The display of an inquiry to the user who shows this drawing 4 (B)For examplethe intertext broadcast by which broadcast was started in October1996 realizesBy the selection operation which doubles cursor with the position of "yes" or "no" by operation of the cross button of the remote control 139and pushes "determination" buttonthe user can pass the data of "yes" or "no" to the script (program) of the 1st object. carrying out naturallyif it is an engineer who has the usual knowledge about these art -- ********** -- since it is thingsdetailed explanation is omitted.

[0048]If you expect that a user connects at the time of a display of this drawing 4 (B) and selection decision of "yes" is carried outwith the automatic access command contained in this 1st object data. The server of the Internet is accessed automatically and the image which the contents (Web page for which game progress of soccer is put up) of a request of the Internet show to drawing 5 (E) is displayed on a screen. When selection decision of [without expecting that a user connects "no"] is carried outthe image by the 1st object will disappear and will

return to the display shown in drawing 4 (A).

[0049]If in charge of the display of drawing 5 (E) which displays the contents of this Internetit is necessary to assign an imaging range on a screen (layout). The layout control data for controlling the image arrangement position on this screenFor exampleit may be transmitted by any of the 2nd object data supplied from the 1st object data or Internet transmitted by VBIor the memory 134 as drawing 2 and drawing 3 explained. This display example is carrying out picture composition of the sports program broadcast on the left-hand side of the screen nowand the picture which carried out browsing of the Web page of the situation of other games incorporated into right-hand side from the Internet.

[0050]When the person of an ordinary home usually uses the Internetit is necessary to connect via the provider (service provider of the Internet) to the Internet with public linessuch as a telephone. Howeverwhen very many users do call origination for a line connection to the service provider side of the Internet simultaneously by the 1st object sent by broadcastSince there is a limitation in restriction by the number of circuit in which the correspondence by the side of a provider is possibleand a line networketc.it may not be connectable with the Internet.

[0051]Theneven if the layout information of the picture is sent to the 1st object transmitted by VBI even ifFor exampledisplaying the image of a game of soccer is continued to the limit of a screenwithout changing the layout of a picture until it is connected to the service provider of the Internet by a public lineFor examplesmall under a screenthe message of the character "it is among a dialup now" is expressed as a superimpositionas repeatedly shown in drawing 4 (C). And after a public line is connected to the service provider of the Internetthe layout of a picture is changed and drawing 5 (E) is displayed.

[0052]The user can project the usual screen to the limit of a screenand can view and listen to a program until it is connected to the service provider of the Internet by a public lineand a user by this. It can know carrying out call origination for a line connection to the service provider side of the Internet. In spite of in other words not being connectable with the Internetthere is no problem that the image of broadcast will be displayed small.

[0053]The layout of a picture may be changed immediately after receiving the information on the layout of a pictureIn this caseit may be made to display the message in the dial-up connection above-mentioned within the limit as which the contents of the Internet are displayed as shown in drawing 5 (D) after change of the layout of a picture until public linessuch as a telephoneconnect with the service provider of the Internet. The user can view and listen to a program with the layout of the picture by the side of a broadcasting station to mean until a public line is connected to the service provider of the Internet for a userand by this. It can know carrying out call origination for a line connection to the service provider side of the Internet.

[0054]It is good also as timing to which the above-mentioned timing is changed to the timing of a line connectionand the server of the Internet is connected. This is

because time will be required by the time it is connected to the server of the Internetafter a public line is usually connected. Therebythe user can view and listen to a program on a big screen longer time.

[0055]Thusthe multi-functional TV apparatus of an application concerned has a function which can carry out automatic access of the server of the Internet with the automatic access command contained in the 1st object data that multiplex was carried out to VBI and has been transmitted to it. And it has the function to control the layout (size and display position) of the picture on a screen by the 1st and 2nd object dataor to insert in with it the text data contained in the 1st or 2nd object dataand still picture information according to a layout.

[0056]It may be made the above-mentioned multi-functional TV apparatus have accessed the server of the Internet by interactive mode with a useras shown in drawing 4 (B)but to access the server of the Internet automatically at compulsionwithout asking drawing 4 (B). Therebythe user can save the time and effort out of which is asked and it comes and which carries out selection decision one by one. It sets up by a user beforehand and may enable it to set about the connection propriety to a public line like whether the screen of drawing 4 (B) which performs an inquiry to this user is displayed. This saves beforehand the data in which it is shown that a user permits a line connection to the memory 134If it detects and saves whether the script of the 1st object is first saved in this memory 134and the data of dial-up connection propriety is savedit is realizable by opting for operation of whether to connect according to this.

[0057]Drawing 5 (F) shows the example of the display when a dialog with a user is possible in the displaying condition of drawing 5 (E). That isin the game of the soccer broadcast nowthis example is planned so that it can vote any of the teams S and O win. In this casethe server of the Internet is accessed with the 1st object data that multiplex was carried out to VBI and has been transmitted to it. Therebythe contents of the Internet are displayed on the right-hand side of a screen.

[0058]For exampleit is said that the contents of this display should vote any of the teams S and O win.And the explanatory note about the operation in the case of casting one's votefor examplethe text "operate the character of the direction which thinks wins among the initials of the teams S and O currently displayed on the screen bottom with the remote control" is indicated. The vote about the teams S and O is transmitted to a server by operation by a previous intertext here using a public line.

[0059]The multiplex position of the 1st object is shown in drawing 6. The 276th line is used for transmission of the 1st object from the 13th line and the 273rd line from the 10th line of VBI. The data of these lines can be incorporated by the VBI data decoder 120and an object can be built in the VBI-data processing block 211.

[0060]Although explained by this explanation that multiplex [of the 1st object data] was carried out to VBIand it was transmitted to itthis invention can also be applied to digital broadcasting. In this casewhat is necessary is to transmit in the form of a packet as supplement information of the program which is viewing and

listening to the 1st object from the broadcasting station sideand just to receive in a receiver the 1st object sent in the form of a packet as supplement information of a program. When uniquely sent as data other than the data of a programif the information about the packet of the 1st object is included as correction data of a programit can know that it is the supplement information of a program in a receiver.

[0061]Drawing 7 (A) is a figure showing an example of the data format (data structure) of the 1st or 2nd object data. Howeverthe 2nd object does not usually have the information on a server address.

[0062]The script which functions on object data as specific program softwareThe layout control data for controlling text dataimage data (multiplex can be uniquely carried out to a broadcast imageand it can project)and an image arrangement position that was explained previouslythe server address (1) in which a file name is also contained like URL(2)——etc. are contained. The treatment of these data is decided by the contents described in the script transmitted simultaneously. The actual data-processing procedure based on a script is decided with the object interpretation block 213. The contents of the Internet which has relation in the program received now can be easily accessed rightly using the above-mentioned server address. Since the object (the 2nd object) of the same format composition as this object is embedded also to the contents of the Internetthe contents of the Internet can also be controlled by any scriptor it can process.

[0063]The multi-functional TV apparatus which can use the memory card 140 further is shown in drawing 8. The memory card 140 is connected to the bus 132 via the memory card interface 141. Although the use table 142 is explained in detail latersince other portions are the same as the composition of drawing 1explanation is omitted. About the memory card 140it is the desirable nonvolatile memory in which electric write-in elimination is possible.

[0064]Drawing 7 (B) is a figure showing an example of the object data described by the above-mentioned memory card 140. The previous example included the server address in object dataand transmitted it. And it enables it to access a server based on a server address. After accessing a serverthere is a case so that he may like to access a link destination still more hierarchical.

[0065]For examplealthough based also on how the information on WWW is offeredFor exampleto provide the outline of selling merchandiseand the information on an index on the 1st hierarchy (access of the beginning of a server address)next know fine contents about each goods. The method which accesses the address of the link destination (the 2nd hierarchy is accessed)and orders it on the Internet may be taken.

[0066]It is to give privacy to the object transmitted by VBI depending on the service provider of the Internet. In such a caseprivacy cannot be maintained if the server address of the object transmitted by VBI was able to be used as it was.

[0067]Thenthe memory card 140 in which the object as shown in drawing 7 (B) was recorded is given to the user who wishs beforehandand when requiredan object can be complemented with this system using the memory card 140.

[0068]The address of the link destination is described by the memory card 140 corresponding to button data. The user can access the server of the link destination address of the Internetif selection operation of the corresponding button is carried out with the remote controlseeing the button display displayed based on button data.

[0069]When data which he would like to save at the memory card 140 has been sentit can save to the data storage field in a memory card. The processing operation of CPU at this time is explained using drawing 9. In the above-mentioned TV apparatusthe sponsor of a program does image display of the Internet information to drawing 9 compulsorilyand the flow chart measured so that there might be no oversight of commercials is shown in it.

[0070]The program in which the 1st object is contained first is receivedit is judged whether the 1st object relates to the Internetand when not related(NO) and a program are received again. When related here (YES)the 1st object (it is not related to the data and the program which interpolate a program dataa server addressetc.) is saved to the data storage field in the memory card 140. Completion of this preservation will start access by a server address with the modem 131 to the Internet. If all the Internet information which contains the 2nd object by access of the Internet is acquiredit will come out on a screen and will draw. And if the commercial information specified is displayedin order to lose the futility of the usage fee of public linessuch as a telephonethe Internet connectivity is compulsorily made into **.

[0071]And after the commercial term decided beforehand expiresit shifts to the screen which displayed the program to the limit of a screen automatically. Although the server address was compulsorily saved to the data storage field in the memory card 140 in this exampleBefore savingthe script on which the button which asks whether save to a memory on a screen after presenting of commercial information is displayed may be included in the 1st object. Therebya server address can be saved by a user's hope. This inquiry is performed by the intertextfor example.

[0072]If the sponsor of a program transmits the addresses (URL etc.) of the server of the Internet of his company to compensate for broadcast of commercialsfor exampleby this a userThe Internet can be accessed at arbitrary time using the server address saved to the data storage field in this memory 140.

[0073]Although explained in this example having saved the server address to the data storage field in the memory card 140it may be made to save to RAM not only this but in the memory 134.

[0074]If the information about the server address of the Internet is included in the 1st objectwill not perform access to the Internet but **What is necessary is just to be able to receive the 1st object that has a script which will be ended if it is possible to make a server address save to a memory and the 1st object shown in drawing 9 in this case is saved. Since it is compulsorily saved as long as memory space allows without asking whether save the preservation to a memory to a user after receiving the 1st object about the server address of the Internetit becomes

unnecessary to answer to whether a user saves frequently thereby.

[0075]When saving without performing this inquiryand memory space has filledit may be made to carry out automatic deletion from the old server address by which the memory is carried out. The server address which always received to the newest by this can be saved in a memory. It is judged by comparing the time stamp memorized with the 1st saved object whether it is old. In the method of elimination of data when memory space has filled. It treats towards not erasing more preferentially than what was not accessed about what read after the user did the memoryand accessed the server address spontaneouslyIt is what the user accessedand when the capacity of a memory has filledit may eliminate from what the user accessed in ancient times.

[0076]Although the object data currently recorded on the memory card 140 presupposed that the 1st or 2nd object data sent on VBI or the Internet is supplemented with or complemented in the above-mentioned explanationOf courseit may have a relation which the 1st and 2nd object data complements mutually. For examplethe image data transmitted by VBI is savedand since the information brought from the Internet is reducible if this image data is used by the object data transmitted via the Internetan access speed can be made quick. Since it controls by the script by the side of a receiving set when performing image displayit is also possible for animation etc. to be controlled and for it to be made to perform an enjoyable display.

[0077]It may be made for a part or all of the 1st and the 2nd object to interchange further again. That isbased on the object by which multiplex has been carried out to VBIaccess of the server of the Internet is performed at first. Nextif contact to a server is completedthe object from a server will take the leadership shortly. For exampleit is effective when it seems that the sponsor of a program wants to show a user self commercials by exclusive use.

[0078]Nextthe use table 142 of drawing 8 is explained in detail. Furthermorethe specification table 142 is formed in this systemand CPU133 can be judged for the contents of the specification table 142 in it. The specification table 142 is a memory which stores that data for what kind of various functions this TV apparatus itself has.

[0079]The information on this specification table 142 is used as follows. It is an object of the Internet or VBI and a display style may be specifiedfor example. For examplemany screen separation fields may be formed and the server which transmits information supposing displaying the information on contents on each field may also exist. That isthe contents set up use all the functions of the newest TV apparatus and the control data for a layout also exist. In such a casein the case of a TV apparatus only with the division capability of two screensit cannot reply to the display requirement from such a server. Thenit has the specification table 142and according to that specificationhe attaches a priority to the picture which should be displayedand is trying to display from the high thing of a priority in this system.

[0080]That isCPU133 judges the layout control data for controlling the image

arrangement position on a screenand if Image Processing Division (for examplemulti picture display of three or more screens) according to layout control data is possible as compared with the contents of the specification table 142it will perform the control data. Howeverwhen Image Processing Division (multi picture display of three or more screens) according to layout control data cannot be realized but only two screens can be displayedit operates so that two image data may be chosen preferentially and this may be displayed.

[0081]When it is television without the split display capability of two screensit may be made to make the image of a program superimpose text data etc. The script which orders it for a TV apparatus which has many tuners to also use developmentnow the image which was and was received with two or more tunersrespectively may be transmitted. The device with which it does not have many tuners with reference to the specification table 142 in such a case utilizes the highest self function that can be expressed.

[0082]Thusalthough the script for operating CPU133 may be stored in program ROM in a TV apparatus from the beginningit may be transmitted by the 1st or 2nd object.

[0083]Drawing 10 is other embodiments of this invention further. Identical codes are given to a previous embodiment and identical parts. The above-mentioned system is connected to public linessuch as a telephoneand it is possible to carry out an auto dial like previous working example. Thenit is set up so that the remote control itself may function also as the portable telephone 150 of a gestalt like the cordless handset of the extension phone by radio. By performing key operation of the remote control 150it is possible to switch telephone mode and the television operation mode. The microphone and speaker of the remote control are allocated by the position which separated by the longitudinal direction of the remote control.

[0084]It can telephone in inputting a partner's telephone number with the remote control 150 at the time of telephone mode. The button for inputting this telephone number is made to serve a double purpose as a button of the channel selection of a TV apparatus. It is not necessary to extend the number of buttons by thisand there is nothing that a numerical value makes a mistake in pushing. Although it has a button to 1-12 as a button of channel selection0 of a telephone number is solved by making it serve a double purpose by 10 of a broadcast channel.

[0085]If a telephone line is connecteda telephone line will be passed to the voice processing part 151 from the modem 131. This voice processing part 151 has a function of the usual extension phone machine. It enables the circuit of this voice processing part 151 and the voice processing part 152 by the side of the remote control 150 to be connected by radio and to talk with a partner furthermore.

[0086]After making this remote control 150 into telephone modeif fixed time passesit will become the television operation mode. Although this will usually use the telephone immediatelyIt is because channel selection of a TV apparatus is operated only when changing a channel occasionallyA channel can be changed exactlywithout being judged considering that the button of a telephone number is pushedwhen it is going to change a channel by this and the channel selection

button of the remote control is pushed.

[0087]On the other handin the TV apparatus sideCPU133 has the function to judge whether the telephone call has been got. And when the telephone call has been gotthe modem 131 is automatically connected to the voice processing part 151 sideand a telephone ringer tone is passed to the voice processing part of the TV apparatus which is not illustrated via the I/O part 137. In this TV apparatuseven when not being viewed and listened to a program on metaphor Television Sub-Divisionwhen a telephone receives a messagea voice circuit can be usedand a ringer tone can be passed from the speaker of a TV apparatus. It is also possible to pass the ringer tone of a telephone from the remote control 150 by transmitting the signal which reports that a message was received contrary to this to the remote control 150 from the voice processing part 151. According to thiseven when the remote control has been lost in somewhere in roomsthe position of a remote control can be known by telephoning to a house.

[0088]When the TV apparatus is used at this time and it is viewed and listened to a programthe voice response from the tuner of a TV apparatus is controlled automaticallyBORIUMU is extractedand the output of a television sound is small made into zero. And the bell sound (ringer tone) of a telephone is made easy to catch. Therebythe user can grasp having got the telephone call certainly. As for the size of a ringer tonewhen passing the ringer tone of a telephone from the TV apparatus sideit is preferred to make it related always become a fixed size at the volume to which the TV apparatus is set. This is realizable by establishing the circuit which carries out multiplex [of the telephone ringer tone] in the latter part of the speech amplifier of a TV apparatus.

[0089]Although the above-mentioned example has the voice processing parts 151 and 152 by the TV apparatus and remote control side and a cable or radio performs audio reception and transmissionit may be made for the voice response from a partner to use the loudspeaker of a TV apparatus. Only a sound receiving means is also as the voice processing part 151 by which it will only be connected to the modem 131 by the side of a TV apparatus that a microphone and a voice transmission means may be formed as the voice processing part 152 by the side of a remote control if it does in this way. In such a casewhat is necessary is just to enable it to set BORIUMU of the voice response of a TV apparatus automatically as a predetermined levelwhen there is mail arrival. By thisthe sound of a telephone will always be outputted with a constant level. What is necessary is just to perform sound adjustment of television through a remote control to adjust furthermore.

[0090]Drawing 11 is other embodiments of this invention further. Identical codes are given to a previous embodiment and identical parts. This TV apparatus is provided with the telephone book memory 160 which saves partner point access information further. The telephone numbers (the partner points (a store name or a name)a telephone numberan addressetc.) etc. which multiplex was carried out to VBI and have been transmitted to it are recorded on this telephone book memory 160 in a predetermined format. In order to record a telephone number etc. on this

telephone book memory 160For examplesince the text message by the superimposition "the memo of a telephone number is possible" is obtained by a script or text data in a programthe memory of a telephone number is performed because a user operates a predetermined key then. This function is convenient by mail order etc.and can prevent **** between aggressiveness of a telephone number. As for recording functionssuch as this telephone numberthe newest thing is recorded according to a user's operation. For examplewhen the telephone number has replaced in spite of the same partner pointit memorizes in the form which updates old data. The newest telephone number will always be registered into a telephone book memory by this.

[0091]If the data recorded on the telephone book memory 160 approaches to the limit [memory space]an inquiry will be performed automatically to a userand unnecessary data and the data with low frequency in use can be deleted now. As requirements for sortingby an automatic ******** programit can arrange and after registration can change the initial of a name (store name) now so that easily [search]. It may be setting out automatically rearranged after registration. The time and effort into which a user rearranges a telephone number one by one by this can be saved.

[0092]By reading if neededmaking it display on the display of a TV apparatusand making a user chooseinformationincluding the telephone number etc. which are furthermore recorded on this telephone book memory 160cannot be mistaken as the target partnerand can telephone. If a remote control is switched to telephone mode and a telephone function is operated in order that a user may telephone as an exampleon the display of a TV apparatusthe list of telephone numbers registered will be displayed first. The desired partner point can be chosen now from a list by a selection key by operating the up-and-down key with which the remote control is equipped here. When the list of telephone numbers is displayed and either of the numerical keypads currently used also [channel selection / of television] is pushedthe partner point which serves as telephone number input mode which is not in a listand is not registered can be telephoned. About a telephone numbera user besides what was obtained from VIB can register now with the data of the partner point uniquely.

[0093]Although the above-mentioned example is a function which carries out record-keeping of the telephone number etc. to the telephone book memory 160 directlyit may register the address of WWW which multiplex was carried out not only to this but to VBIand has been sent to it like a telephone directory. Also in this caseas requirements for sortingby an automatic ******** programit can arrange and after registration can change the initial of a name (store name) now so that easily [search]. It may rearrange automatically after registration.

[0094]It may enable it to extend the above-mentioned telephone function and the telephone book memory 160 with the remote control 150 with an option. The telephone book memory 160 is used also [memory card / 140 / previous].

[0095]Furthermoreother embodiments of this invention may be provided with an answering machine function. When there is mail arrivalan answering machine

function records a partner's messageafter it answers automatically. This timed-recording function can be further set also to answering machine mode with the remote control 150and if set as this modeCPU133 will be in a telephone waiting state. If there is mail arrivalthe predetermined time of the message from a partner is automatically storable in the memory 134 as an output. In this casea power supply is always one and a data processing part (portion enclosed with a dashed line) is made into a waiting state.

[0096]When there is an answering machine and a user switches on the power supply of the Television Sub-Division function of a TV apparatus after this after being set as this answering machine modeCPU133 judges whether the data of timed recording exists and controls the graphic controller 135 to display on a screen the icon or message which shows that there was timed recordingwhen automatic answering data exist in the memory 134. ****** in which the user had timed recording by this -- things are made.

[0097]It is a time of the power supply of the TV apparatus being switched onand when the telephone function is set as the automatic answering modethe function which displays on a screen the icon or message which shows timed recording is provided on the screen.

[0098]The signal from an imaging device is connected to the bus 132and it has a video telephone functionWhen it is detected that the partner supports the same video telephone functionthe picture for timed recording registered beforehand to the memory 134 is transmitted to the other party via the modem 131and it may be made to save a message to the saved area of the memory 134. It is preferred to switch the picture sent in the datea day of the weeka time zoneetc. it is [time zone] the credit of a telephoneand to which it came as a picture for timed recording transmitted to the other party at this timeand to transmit.

[0099]This system enlarges memory space further and is provided also with the function which acquires [by the 1st object] required information through the Internet beforehand by the following TV program. That isin the 1st objectunless the change of a channel is performedthe following program and the server relevant to it have become clear. Thereforeit is made to make the data which transmits the server address for the following programand was acquired from this server stand by as preserved data in the program to precede. If it does in this waywhen it shifts to the following programrequired Internet information will already be acquiredthe display of commercialsa problemetc. will be enabled without waiting timeand cooperation with a program will become good.

[0100]In the above-mentioned TV apparatusthe sponsor of a program does image display of the Internet information to drawing 12 compulsorilyand the flow chart measured so that there might be no oversight of commercials is shown in it. And if the commercial information specified is displayedin order to lose the futility of the usage fee of public linessuch as a telephonethe Internet connectivity is compulsorily made into **.

[0101]And after the commercial term decided beforehand expiresit shifts to the original enlarged picture automatically. The example of the flow chart in the case

of leaving it to a user's selection is shown in drawing 13without performing compulsive **** processing. For examplethose who perform the person of a handicap or linguistic study may be provided with the contents of the conversation of an image in the title character of various kinds of languages. In such a caseit is more convenient than to send by data broadcasting to have enabled it to choose the title of various kinds of languages through the Internet. In such a caseit is better to have enabled it to choose freely whether a user displays or not. It is better to be able to be made to carry out in a user's judgment Takeshi of the circuit of the Internet in this case.

[0102]Although the above-mentioned explanation explained the 1st object as what is sent in relation to a programThat is not necessarily rightand it is [anything] goodif the broadcast and Internet information which were connected to the Internet by the 1st object sent by broadcastand were specified as Internet information are simultaneously displayed even if not related in particular.

[0103]

[Effect of the Invention]As explained aboveaccording to this inventionrelated processing with the object sent by broadcast and the object obtained from accessible means other than broadcast can be performedand improvement in utility value and convenience can be acquired for a user and (broadcasting station) a provider.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]The figure showing a 1st embodiment of this invention.

[Drawing 2]The block diagram shown in order to explain the example of 1 operation of the device of drawing 1.

[Drawing 3]The figure showing the object quoted by the contents and these contents of the Internet.

[Drawing 4]The figure showing the display image shown in order to explain the example of the device of this invention of operation.

[Drawing 5]The figure showing the display image shown in order to explain the example of the device of this invention of operation.

[Drawing 6]The explanatory view shown in order to explain the position of the 1st object of a vertical blanking period (VBI).

[Drawing 7]The figure showing the memory map of the figure showing an object by a data structureand a memory card.

[Drawing 8]The figure showing the embodiment of further others of this invention.

[Drawing 9]The flow chart shown in order to explain the example of the device of this invention of operation.

[Drawing 10]The figure showing other embodiments of this invention further again.

[Drawing 11]The figure showing other embodiments of this invention again.

[Drawing 12]The flow chart shown in order to explain the example of the device of

this invention of operation.

[Drawing 13]The flow chart shown in order to explain other examples of the device of this invention of operation.

[Drawing 14]The figure showing the composition of the conventional TV with Internet functions.

[Drawing 15]The figure for explaining the example of 1 operation about processing of the Internet information of the device of drawing 14.

[Description of Notations]

112 -- A tuner113 -- An NTSC decoder114 -- Compression elongation processing part115 [-- Modem] -- A memory116 -- A composition processing part120 -- A VBI decoder131 132 [-- Graphic controller] -- A system bath133 -- CPU134 -- A memory135 136 [-- A remote control140 / -- A memory card141 / -- A memory card interface142 / -- A specification table151 / -- A voice processing part160 / -- Telephone book memory.] -- Video memory137 -- An I/O part138 -- A light-receiving data processing part139150